

Appl. Ser. No. 09/857,673

Att. Docket No. 10191/1840

Reply to Office Action of August 1, 2003

Amendments to the CLAIMS:

Without prejudice, this listing of the claims replaces all prior versions and listings of the claims in the present application:

LISTING OF CLAIMS:

1-21. (Canceled).

22. (Currently Amended) A method of packaging electronic components, comprising the steps of:

forming a plurality of cavities in a package substrate, the package substrate being made of one of a semiconductor material and a photopatternable glass;

mounting the electronic components in the plurality of cavities;

sealing the plurality of cavities with one of a cover substrate and a cover layer; and

separating the electronic components,

wherein the package substrate includes a thinned central area and a remaining thick substrate edge that stabilizes the package substrate and that is used for handling purposes.

23. (Previously Presented) The method according to claim 22, wherein the semiconductor material is silicon.

24. (Currently Amended) The method according to claim 22, wherein the package substrate includes a first side facing toward the one of the cover substrate and the cover layer and a second side facing away from the one of the cover substrate and ~~the~~ the cover layer, the second side including a metal layer for contacting the electrical components.

25. (Previously Presented) The method according to claim 24, wherein the first side of the package substrate includes an insulation layer.

26. (Previously Presented) The method according to claim 22, wherein the plurality of cavities are produced by etching using photostructuring.

Appl. Ser. No. 09/857,673

Att. Docket No. 10191/1840

Reply to Office Action of August 1, 2003

27. (Previously Presented) The method according to claim 22, wherein the plurality of cavities are designed as passages through the package substrate.

28. (Previously Presented) The method according to claim 22, wherein the plurality of cavities are shallow to accommodate the electronic components.

29. (Previously Presented) The method according to claim 22, further comprising the steps of:

applying a number of the electronic components corresponding to a number of the plurality of cavities formed on the package substrate to a component carrier layer; and
joining the package substrate to the component carrier layer.

30. (Previously Presented) The method according to claim 29, wherein the component carrier layer is a metal layer.

31. (Previously Presented) The method according to claim 30, wherein the component carrier layer is a layer of silver.

32. (Previously Presented) The method according to claim 22, wherein the electronic components include a diode.

33. (Previously Presented) The method according to claim 32, wherein the diode is a Gunn diode.

34. (Previously Presented) The method according to claim 22, wherein the one of the cover substrate and the cover layer is made of the semiconductor material and is used to contact a terminal of the electronic components.

35. (Previously Presented) The method according to claim 34, wherein the semiconductor material is silicon.

Appl. Ser. No. 09/857,673

Att. Docket No. 10191/1840

Reply to Office Action of August 1, 2003

36. (Previously Presented) The method according to claim 29, further comprising the step of:
applying contact springs to the one of the cover substrate and the cover layer for
contacting the electronic components.

37. (Previously Presented) The method according to claim 36, wherein the contact springs
are produced by a galvanic metal deposition.

38. (Previously Presented) The method according to claim 22, wherein the one of the cover
substrate and the cover layer is made of an organic dielectric.

39. (Previously Presented) The method according to claim 38, further comprising the step of:
applying a contact for establishing an electric connection to a terminal of a respective
one of the electronic components by:

- i) etching contact holes through the organic dielectric, and
 - ii) applying a metal layer,
- wherein the organic dielectric is a photosensitive lacquer.

40. (Previously Presented) The method according to claim 22, wherein the electronic
components are separated by sawing.

41. (Previously Presented) The method according to claim 22, further comprising the steps of:
arranging the package substrate as an insulating carrier layer;
enclosing the plurality of cavities by insulator structures situated outside the package
substrate;
applying the electronic components to a component carrier layer; and
mounting the electronic components in the plurality of cavities by joining the
component carrier layer, the insulator structures, and the one of the cover substrate and the
cover layer.

Appl. Ser. No. 09/857,673

Att. Docket No. 10191/1840

Reply to Office Action of August 1, 2003

42. (Previously Presented) The method according to claim 41, further comprising the steps of:

- joining the one of the cover substrate and the cover layer and the package substrate;
- forming separate insulator structures; and
- joining the component carrier layer to the electronic components.

43. (Previously Presented) The method according to claim 41, further comprising the steps of:

- joining the component carrier layer and the package substrate;
- forming separate insulator structures; and
- joining the one of the cover substrate and the cover layer to the package substrate.

44. (Previously Presented) The method according to claim 41, wherein the package substrate is arranged as a carrier layer, made of a photopatternable glass, wherein the insulation structures are separate from each other, and wherein the separate insulator structures are exposed by a selective etching of the photopatternable glass.

45. (Previously Presented) The method according to claim 44, wherein the one of the cover substrate and the cover layer includes contact springs for contacting electric terminals of the electronic components.

46. (Previously Presented) The method according to claim 45, wherein the contact springs are produced by a galvanic deposition of metal.